RMRS Rocky Mountain Remediation Services L.L.C
protecti g the environment

RF/RMRS-97-033
REV. 0

HEALTH AND SAFETY PLAN FOR THE ACTINIDE MIGRATION GEOPROBE

JUNE 24, 1997

CONTROLLED DOCUMENT (4)

ROCKY FLATS PLANT

ENVIRONMENTAL MANAGEMENT DEPARTMENT

Health and Safety Plan for the Actinide Migration Geoprobe

This is a RED Stamp COPY # 35

RF/RMRS 97 033
Revision 0
Page 1 of 8

	Name	Signature	Title	Date
Approved by	J Anderson		Health Phys	6/24/97
Approved by	Scott A. Newsom		EAD ENG	6/24/97
Approved by	M D Schreckengast	M D Schreckengast	ESH&Q	6 24-97

Purpose

This Health and Safety Plan (HASP) covers planned subsurface soil sampling activities utilizing a Geoprobe hydraulic push type sampler to be performed in the Americium Zone from June July 1997 The Americium Zone is an area of radiologically contaminated soil Volatile organic compound contamination is probably present at depth but is not a hazard for this project due to the shallow sample depth

Scope

The objective of this work is to collect subsurface soil samples to provide a preliminary determination of the range in Pu phase speciation and soil Kd values in the 903 Pad area soils This data coupled with information about water flow during normal' rains and storm events will provide a basis for further evaluation of the rate of radionuclide transfer to surface waters and the link between surface water and soil action levels The scope of this proposed activity is limited to sample collection by the Geoprobe method All activities described will be conducted in accordance with this HASP and will be performed by or at the direction of Environmental Restoration Projects personnel **Project contacts and emergency phone numbers are listed in Table 1**

Description of Planned Intrusive Activities.

A van mounted Geoprobe sampling rig will be driven into the Americium Zone The rig will be used to collect approximately five (5) core samples from east of the 903 Pad and Lip Area The direct push method employed by the rig will not generate waste cuttings or airborne dust The soil samples will be enclosed in liners contained within the sampling assembly

Hazard Assessment and PPE Requirements

Wildlife

Snakes ticks spiders and chiggers may be encountered during performance of this task

Radiological

No dust emissions should be generated during direct push sampling activities Any excessively dry soils brought to the surface will be wetted by a portable sprayer to minimize dust emission Dust generation not controllable by wetting the area will result in a halt of activity and re-evaluation of procedures Monitoring of the sampling tools during withdrawal shall ensure against exposure of personnel to radiological contamination A summary of radiological contamination concentration levels detected in the subsurface soils in the 903 Lip Area is shown in Table 2

Table 2 ANALYTES DETECTED IN SUBSURFACE SOIL, 903 LIP AREA

Location	Analyte	Concentration (pCi/g) Min	Max	Mean
903 Lip Area	Americium-241	0 013J	22	1 68
	Plutonium-239/240	0 018J	180	8 7
	Uranium-235	0 118	0 118	0 118

Personal Protective Equipment (PPE) requirements are Level D Modified, unless the Radiological Work Permit (RWP) contains more stringent requirements

Level D Modified PPE

- DOE coveralls
- steel toed boots safety glasses with side shields
- boot covers or foot protection as stated in the RWP
- latex or nitrile gloves or hand protection as stated in the RWP
- hearing protection during geoprobe hammer operations

Physical

Heat stress monitoring will be performed by an HSS using a Wet Bulb Globe Thermometer (WBGT) The RMRS heat stress guidance (letter RJC-014-96) will be used to calculate stay-times The Geoprobe van wheels will be blocked during sampling operations and only the operator and helper will be allowed in the immediate vicinity of the vehicle Borehole locations will be investigated for the presence of overhead and underground utility lines by the Kaiser Hill Excavation Specialists prior to the commencement of intrusive activities Operations will be a minimum of ten feet from above or below ground utilities

During thunderstorms, periods of heavy rain, or high winds, at the discretion of the HSS or shift superintendent, the project will be suspended and project personnel will be directed to seek shelter Physical hazards are identified in Table 3 Activity Hazard Analysis (AHA) Actinide Migration Geoprobe

Radiological Contamination Monitoring

Radiological contamination monitoring will be performed for total fixed plus removable and removable alpha and beta/gamma contamination Radiological requirements and suspension limits are specified on the RWP

In the event that unexpected hazards or conditions are encountered during investigation activities the project activities will pause to assess the potential hazard or condition The project manager and field manager will be notified immediately, as well as the RMRS Safety Officer The potential hazard or

condition will be evaluated to determine the severity or significance of the hazard or condition and whether the controls on the project are sufficient to address the hazard or condition Based on this initial evaluation a determination will be made whether to proceed with controls currently in place segregate the condition or hazard from the project activity if it can be done safely or curtail operations to address the unexpected hazard or condition Approval to proceed must be obtained from RMRS Director of Environmental Restoration Ann Tyson or her designee

Respirable Dust Monitoring

Dust generation is not expected during this activity However a MIE Miniram will be used to monitor for respirable dust If levels exceed 1 5 mg/m^3 in the breathing zone (sustained) dust suppression must be used The Miniram will be zeroed daily in accordance with manufacturer's specifications

Medical Surveillance

Medical Surveillance is not required on this task however, it may be required if workers are required to wear respirators for more than 30 days on other projects

Equipment Decontamination

Equipment performing intrusive activities will be decontaminated to the extent possible within the work area (brushing off loose dirt soap/water brush water rinse) Radiological contamination monitoring will then be performed for total fixed plus removable and removable alpha and beta/gamma contamination If contamination levels are below the allowable limits for unrestricted release, the equipment may then be released to the 891 Yard by the Health and Safety Specialist (HSS) If further decontamination is deemed necessary the equipment will be transferred to the Main Decontamination Facility for decontamination and further monitoring It is not anticipated that the equipment used will require near term release off plant site

Training

Employees will not participate in field activities until they have been trained to a level required by their job function and responsibility All training and field experience will be certified Training requirements are as follows

- 40 hour Basic Training, #023-482 01
- Rad Worker II, #018 691 03
- OSHA Supervisor for Field Manager
- Personnel training on the Geoprobe for operators (including GT 39)
- Pre Evolution Briefing

Site Control Measures

The Americium Zone is located southeast of the PA on the south side of Central Avenue as shown in Figure 1 In the event of an emergency or as otherwise directed workers shall report to the designated assembly area shown in Figure 1

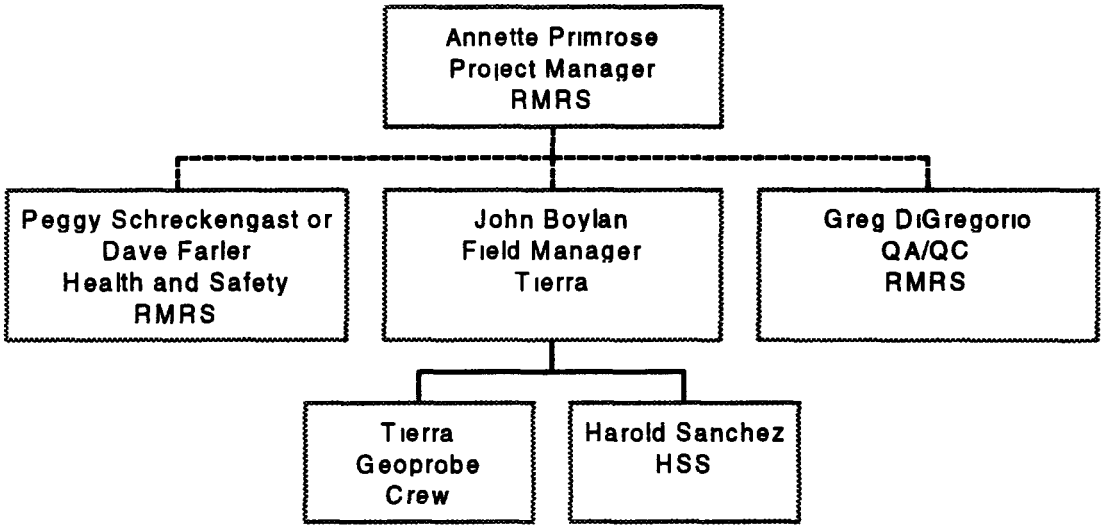
Radios for on site communication will be required during the performance of this task

The 'buddy system' will be utilized no employee will be allowed to work alone at any time during the performance of this project The responsibility of workers utilizing the buddy system includes

- Providing his/her partner with routine and emergency assistance,
- Observing his/her partner for signs of chemical or heat stress exposure
- Periodically checking the integrity of his/her partner's PPE

Project Organization and Responsibilities

The project manager is responsible for budget and schedule control The Field Manager will direct daily activities and be the point of contact for all project issues The HSS is responsible for frisking personnel and equipment out of the area



Emergency Response Plan

Potential emergency situations during work during the Actinide Migration Geoprobe activities include employee contamination accidents injuries and natural disasters Safety precautions will be taken to avoid emergency situations However if an emergency does arise, the procedures described in this section will be followed

In the event of an injury requiring more than minor first aid, or any employee reporting any sign or symptom of exposure to hazardous substances immediately take the victim to the Medical Facility located at Building 122, phone x 2911 In the event of life-threatening or traumatic injury implement appropriate first aid and immediately call for emergency medical assistance at x 2911 The nearest designated trauma center is the Medical Facility located at Building 122 phone x-2911 See attached map (Figure I) In the event of natural disaster the need for evacuation will be determined and communicated verbally to personnel

The Project Manager with assistance from the Field Manager and the Site Safety Officer, has responsibility and authority for coordinating all evacuations and emergency response activities until proper authorities arrive and assume control Immediate notification to management and safety will be made as soon safely possible

Site Evacuation

If an evacuation is necessary personnel will exit the area and proceed to the primary assembly area (Figure 1) The need for personal decontamination and radiological frisking will be evaluated based on the reason for the evacuation and will be verbally communicated to field employees NOTE During an emergency evacuation, there are no operations within the area that are vital enough to delay the evacuation for even an instant

Table 1 Emergency Contact Telephone and Pager Numbers

Fire	x 2911
Ambulance	x 2911
Security	x 2911
HASMAT Emergency Response	x 2911

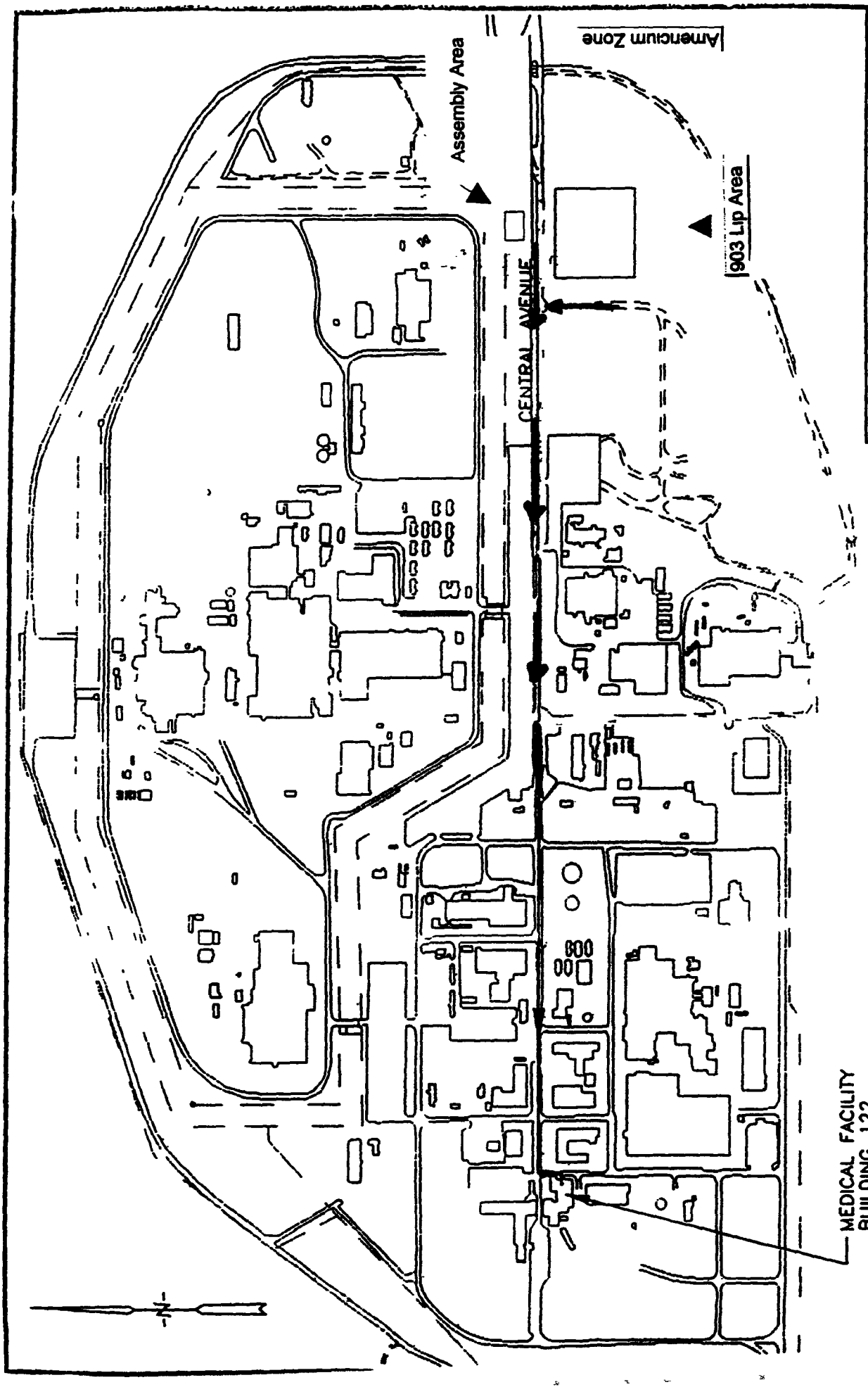
Nearest Emergency Medical Services Are Located At Building 122 as shown on the attached map (Figure 1)

Nearest telephone is located at T893 B

Additional Project Telephone Numbers

Director ER Ann Tyson	x4829/d1101
Group Manager ER Projects Marla Broussard	x6007/d4010
H&S Manager Ken Jenkins	x5374/d7455
Project Manager Annette Primrose	x4385/d4675
Field Manager John Boylan	x7728
H&S Supervisor Peggy Schreckengast	x6790/d3059
Occupational Health General Information	x2594

Note d = digital page, the digital page system can be activated on plantsite by dialing extension 4000, then following the instructions



ROUTE TO RFETS
MEDICAL FACILITY (BLDG 122)
Figure 1

ROCKY MOUNTAIN REMEDIATION SERVICES

ACTIVITY HAZARD ANALYSIS

JOB/PROJECT	Actinide Migration Geoprobe
ACTIVITY DESCRIPTION	Geoprobe Activities in Americium Zone

Activity	Potential Hazard	Protective Control Measures
Geotechnical (geoprobe) borings sampling and pre-work surveys	General Work Hazards	All personnel will wear steel toed shoes safety glasses with side shields and work gloves as applicable Hard hats will be worn when rig is operating
	Slips trips and falls	Pre-activity work area survey to identify potential hazards associated with operations
	Insect stings spider bites snake bites	Sensitive individuals to notify Field Manager before work begins Individuals to visually check for life-forms before reaching into covered area or walking through grassy areas
	Exposure to airborne radioactive contaminants	Radiological contamination monitoring will be performed
	Dermal contact with radioactivity and chemically contaminated soil and water	Personnel will use appropriate level of PPE Personnel performing work will be frisked out of work area
	Underground/above-ground utilities and/or electrical hazards	Utility clearances will be performed prior to beginning work
	Heat stress	HSS will perform heat stress monitoring
	Inclement Weather	Project will be suspended and personnel directed to seek shelter during thunderstorms and lightning
	Noise Exposure	Hearing protection will be required during geoprobe hammer operation
	Back Injury	Employ proper lifting techniques
Equipment Decontamination	Contact with potentially contaminated rinse water	Personal PPE will be defined prior to decon operations

I have read the contents of this HASP and agree to comply with the contents within

Name	Signature	Title	Date